

Legs tinged with yellow, femora somewhat swollen, three long spines at apex of tibia.

Abdomen dirty white, tinged with yellow, a row of long hairs near the base of each tergite, cerci elongate.

*Measurements:* Entire soldier 6.5–7 mm. long; head with mandibles 3.6 mm. long; head without mandibles (to anterior) 2.4 mm. long; left mandible 1.2 mm. long; pronotum 0.95 mm. long; hind tibia 1 mm. long; head (anteriorly) 1.4 mm. wide; (posteriorly) 1.6 mm. wide; pronotum 1.65 mm. wide.

*Type locality.*—Barro Colorado Island, C. Z., Panama.

Described from three winged adults, collected with one soldier and nymphs at the type locality "24, VII," N. Banks, collector. Other winged adults, soldiers and nymphs collected at Frijoles, C. Z., "10, VII," N. Banks, collector.

*Type.*—Winged adult, Cat. no. 15105, Museum Comparative Zoology, Cambridge, Mass.; morphotype, soldier; paratype in U. S. National Museum, Washington, D. C.

ENTOMOLOGY.—*Some new species of North American treehoppers (Membracidae, Hemiptera).* E. D. BALL, U. S. Department of Agriculture.

The writer is working on a revision of the tribe Telamonini which includes the major portion of the large treehoppers of the temperate regions of the United States. In studying the various collections a number of new species have been discovered. As it will probably be some time before the revision is completed, it has been thought best to describe the new species in advance so that the material may be distributed.

#### *Glossonotus nimbatulus* new species

Resembling *turriculatus* but smaller, darker, with a tall, variable, foliaceous crest resembling *acuminatus*. Length 7 mm., width 4.5 mm., height 5 mm. Horn anterior and nearly vertical, broad and high, constricted near middle, nearly evenly foliaceous at apex, as seen from front broadly inflated from just above the very short and weak lateral angles, tapering evenly to just before the apex. Lateral angles obtuse, about half the width of the eye. Pronotum moderately acute in both planes.

*Color.*—Uniform chestnut or darker, varying to almost black, with pale points on the sides of the horn. In the lighter specimens there is a narrow light median stripe from the apex of horn to apex of pronotum, becoming narrower in the darker specimens and occasionally wanting.

Type female, Long Island, N. Y. (Davis); allotype, male, White Mountains, N. H. (Ball); paratypes: Lakehurst, N. J. (Barber and Am. Mus. N. H.); Roselle Park, N. J.—Matausch (Am. Mus. N. H.); Framingham, Mass. (Dickerson Coll., Am. Mus. N. H.); Karner, N. Y. (N. Y. St. Coll.); and Pennsylvania (Baker Coll., U. S. N. M.).

Type and allotype in author's collection; paratypes in Davis, Barber, Am. Mus. N. H. and U. S. N. M. collections.

#### *Heliria gibberata* new species

Slightly smaller and darker than *cristata*, with the crest nearly uniform in height and only slightly overhanging. Female: length 10 mm., width 7 mm., height 5 mm.; males: length 8 mm.

Pronotum long, low, acute, weakly striated, crest prominent, situated as in *cristata* but with the posterior lobe long, almost as high as the anterior and nearly level, the anterior lobe rising in a gentle curve to the rounding and only slightly overhanging apex. Humeral angles very prominent in the female, resembling *cristata*. Males, shorter with a lower and less differentiated crest and with the humeral angles much reduced.

*Color*.—Pale creamy ground with irregular dark mottlings giving a grizzled appearance, these usually emphasized on anterior and posterior margins of crest, the latter often extending as an oblique stripe to costa.

Type female, allotype male, and three pair of paratypes collected by the writer at Ames, Iowa; a female from Galesburg, Ill., Stromberg (Godg. Coll.) U. S. N. M.; and one from Lincoln, Neb. (Osborn Coll.).

Type and paratype in author's collection; paratypes in U. S. N. M., A. M. N. H., and Osborn collections. The difference in the shape of both lobes of crest render this a strikingly distinct species.

#### *Heliria cornu tula* new species

Resembling *gibberata*, crest slightly longer, anteriorly upright or slightly retreating, superficially resembling *Telamona maculata*. Female: length 10 mm., height 6 mm., width 7 mm.; male: length 8.5 mm.

Pronotum low, the apex abruptly pointed, bearing definite striations posteriorly. Crest larger and longer than in *gibberata*, the anterior margin arising perpendicularly from the face of the metapodium excluding the median convexity; anterior lobe large, anterior angle broadly rounding; posterior lobe but little lower than the anterior, upper margin horizontal, posterior angle almost right-angled. Humeral angles longer than in *cristata*, rather narrow at base, then expanded and rounding to the long apices, as a whole, extraordinarily ear-like. Male crest smaller, the anterior margin sloping, the anterior lobe inclined to be broadly pyramidal.

*Color*.—Pale gray, sometimes with a greenish tinge, mottled with darker, usually the dark color is emphasized across the metapodium; on the upper part of crest and in two bands behind the crest. Two examples are closely and almost uniformly irrorate with dark.

Type female, Faltbush, L. I. (Olsen Coll.); allotype male, Elizabeth, N. J. (Matausch. Am. Mus. N. H.); 3 paratype females and 3 males from the Matausch Collection, Am. Mus. N. H., one labeled Bronx, N. Y., one paratype female, Hummelstown, Pa. (DeLong Coll.), and one male, Maryland (Uhler. Coll. U. S. N. M.).

Type and paratypes in author's collection; allotype and paratypes in the Am. Mus. N. H.; paratypes in U. S. N. M. and collection of DeLong.

#### *Heliria clitella* new species

Resembling *sinuata*, but with a short oblique crest and short humeral angles. Length 11 mm., width 6 mm.

Pronotum long, low, striae only normally developed and not prominent at apex. Crest shorter than in *sinuata*, anterior and posterior margins almost parallel, sloping, anterior lobe pyramidal or rounding, the posterior lobe short, the angle acute, produced. Crest with two compressed areas, one along front margin and the other parallel with it just before the posterior margin; these two troughs are separated by a very pronounced ridge that extends to the apex of the pyramid. Humeral angles very short and broad, rounding to just before the slightly acute apices.

*Color*.—Grizzled gray, slightly mottled with dark, without definite pattern, a broad creamy stripe arising from just below the posterior angle of the crest and extending two-thirds of the way to apex of pronotum.

Type female, and allotype male from Huachuca Mts., Ariz. (Schaffer, Brooklyn Mus.); paratype female taken with the types (Woodruff Coll.), and a male from Arizona (Cornell Coll.)

Type in author's collection; allotype in the Brooklyn Museum; paratypes in Cornell Collection and collection of L. M. Woodruff.

#### *Heliria fitchi* new species

Resembling *sinuata* but with a lower crest and a more definite "step." Length 11 mm., width 6 mm.

Pronotum very long, striae normal, crest moderate, placed well back of metapodium, intermediate in length between *sinuata* and *clitella*, anterior margin quite sloping, posterior margin vertical, anterior lobe almost uniformly rounding above, one-third higher than the posterior one, posterior lobe almost square. Humeral angles very short for this group, slightly acutely angled with the margin rounding.

*Color*.—Pale creamy with quite definite dark mottlings, as follows: most of the crest including an oblique band to the costa, a spot on the costa before this and most of the apical region of pronotum. The oblique stripe and the apical markings are separated by a white band which is enlarged on the median line and contains a definite dark spot. One example is much darker than the others and the old examples are pale brown rather than creamy.

Type female, allotype male, and one paratype female, Charter Oak, Pa. (DeLong); paratype male, New York (Fitch Coll., U. S. N. M.) and another labeled "city" (Uhler Coll., U. S. N. M.), probably from Baltimore, Md.

Type female and allotype male in author's collection; paratypes in U. S. N. M. and DeLong's collection.

This is a strikingly distinct species although closely related to *sinuata* and *clitella*. The examples from the Fitch collection in the National Museum are labeled *Telamona concava* Fitch and one parasitized example, probably a female, is labeled "type." This is not the species represented by the Fitch type in the Albany collection as will be discussed in a later paper.

#### *Heliria gemma* new species

Resembling *fitchi* but paler and with a less definitely sinuated crest; crest intermediate between that of *fitchi* and *concava*. Large; female, light creamy with brown mottlings; males brown, hairy; crest long, broadly pyramidal with a posterior sinuation or step. Length, female 11 mm., width 5.5 mm., height 5.5 mm.; male, length 8-9 mm.

Pronotum long, acute, crest arising just back of the metapodial slope, anterior margin sloping insensibly into the outline of the rather large broadly rounding anterior lobe, posterior lobe short, sometimes almost merged into the posterior slope of the anterior one, usually represented by a slight step or sinuation, the posterior angle obtuse and the margin rounding into the posterior process. Humeral angles very broad, about right-angled, equaling or exceeding the breadth of the eye.

*Color*.—Female pale creamy, irregularly irrorate and mottled with brown, the brown mottling emphasized on the crest, the oblique stripe and at the apex of pronotum, the creamy emphasized in a semicircle beneath the crest on

either side and a band behind the crest which is connected with a definite white stripe on the posterior face of crest. The semicircles are irregular along the margin with brown mottling along the lower border and a tooth of light pushed up into the anterior base of the crest. The males are densely hairy, almost uniform brown, with traces of the creamy tooth and the posterior stripe.

Type female, Vermont (Barrett); allotype male and two pairs of paratypes, Adirondack Mts., N. Y. (Barber); paratype females, Catskill Mts., N. Y. (Wanakana, N. Y. (Osborn Coll.); Lancaster, N. Y. (Van D. Coll., Ames); New Hampshire and Massachusetts (U. S. N. M.); and males, Elk Park, N. Y. (Drake); and Mt. Katahdin, Me. (Barber).

Types, allotype, and paratypes in author's collection; paratypes in U. S. N. M., Am. Mus. N. H., Ames Coll., Osborn Coll., and Barber Coll.

#### *Telonaca tremulata* new species

Resembling *pyramidata* slightly shorter, stouter, with a broader sloping sinuate crest and much darker pigmentation. Length, female 9–10 mm., with 5.5 mm., height 5 mm. Length, male 8 mm.

Pronotum stout, the apical process rarely as long as the elytra, with a long pyramidal crest sloping from the metapodium to the anterior angle with a slight sinuation; anterior angle almost a right angle; top of crest long, sloping, concave, slightly sinuate, posterior angle obtuse, the posterior margin sloping slightly less than the anterior.

Numeral angles prominent, similar to *pyramidata*, not as long as their basal width, scarcely equaling the eye in length, slightly acutely angular, the apex rounded.

*Color*.—Variable, usually soiled yellow, so heavily irrorated and mottled with dark fuscous as to give a general dirty grizzled appearance with still darker areas on the crest and extending obliquely to the costa as well as at the apex. The males are usually darker, sometimes with a brownish shade. The Utah examples are pale creamy with definite dark markings in sharp contrast.

Type male Ephraim, Utah, July 20, 1924; allotype female Salem, N. Y., July 27, 1924, both collected by the writer on aspen. Paratypes: Woodruff, Wisc. (DeLong); Bayfield, Wisc., (Wickham, Barber Coll.); Osceola, Wisc. (Ball); Cranberry lake, N. Y. (Osborn); Canada (Baker, U. S. N. M.); Buena Vista, Colo. (Wickham); and Colorado (Baker, U. S. N. M.).

Type and allotype in author's collection; paratypes in Barber, Osborn, DeLong, Am. Mus. N. H. and U. S. N. M. collections.

#### *Telamona tiliae* new species

Intermediate between *spretta* and *reclivata* in outline, resembling *spretta* but with definite dark markings especially in the male. Length, female 10 mm., width 6 mm., height 5 mm. Length, male 9 mm.

Pronotum long, acute, crest broad, quadrangular, inclined posteriorly, the anterior margin sloping from middle of metapodium to middle of crest, crest obliquely truncate, the anterior angle roundly rectangular, the posterior one obtuse, posterior margin upright, rounding into pronotum below. Humeral angles slightly obtusely angular, their margins curved, almost equaling the eye.

*Color*.—Dirty grayish-green, fading to dirty yellowish, with most of the crest and an oblique strip to costa brown; in the females this brown area may

only be emphasized on the margin but in the males it is broad and definite, a broad light stripe on anterior and posterior margins of erect.

Type female and allotype male, Ames, Iowa. Two pairs paratypes, Ames, Iowa, and two pairs, Milwaukee, Wisconsin, all collected by the writer on basswood. Type in author's collection; paratypes in author's collection, Am. Mus. Nat. Hist. and U. S. Nat. Mus.

#### *Telamona gibbera* new species

Resembling *tiliae* but smaller and differently marked, slightly larger than *reclivata*, with a taller, narrower crest. Length, female 9 mm., width 5 mm., height 6 mm. Length, male 8 mm.

Pronotum low, rather broad with a narrow upright crest arising well back of the metapodium. Crest with the anterior margin vertical and in line with the lateral angles; dorsum obliquely rounding, highest just back of the anterior margin and sloping down to the obtuse posterior angle, posterior margin slightly sloping and rounding into the broad apical portion; humeral angles broad, almost right angles, equaling the eyes, resembling *tiliae*. Male slightly smaller than the female with the crest sloping equally from both front and back.

*Color*.—Dirty gray, slightly darkening around the margin of crest and set off by a white stripe on the posterior slope. Male highly and strikingly ornamented, as follows: Face and metapodium irregularly mottled with brown; crest heavily margined with dark brown with occasional light spots, a creamy area below the crest on either side which sends up a narrow yellow stripe into the dark of the crest, anterior carinae narrowly light and posterior slope broadly so.

Type female, allotype male, and 3 paratype females, Williams, Ariz. (Knight); 1 paratype female, 1 paratype male, Pinal Mts., Ariz. (Wickman Ames Coll.); 2 females, Williams, Ariz.; and 1 female and 2 males Flagstaff, Ariz. (Barber and Swartz); 1 female and 3 males, Chiric. Mts., Ariz. (Hubbard)—all U. S. N. M. Type and allotype in author's collection; paratype in collection of author—H. H. Knight, Ia. St. Coll., Kan. U., U. S. Nat. Mus. and Am. Mus. N. H.

#### *Telamona tarda* new species

Resembling *gibbera* but with a slightly more anterior and pyramidal crest. Length, female 8.5 mm., width 4.5 mm., height 5 mm. Length, male 7 mm.

Pronotum long and acute, about five lateral carinae strongly developed back of the crest as in *woodruffi*; crest arising only slightly back of the metapodium, anterior margin slightly sloping from the metapodium to just before the evenly rounded apex; apex about one-half the width at base, posterior margin more sloping than the anterior, its outline almost straight to where it rounds to the pronotum. Humeral angles very short and rounding, one-half the length of the eye. Male very small, hairy, with a low rounding crest sloping equally from both margins.

*Color*.—Pale dirty grayish-brown with slight darkening of the margins of the humeral angles and crest; median carina black interrupted before and behind the crest with light. Male darker with the crest mottled brown.

Type female and allotype male, paratype female and male, Roselle Park, N. J. (Matausch Coll., Am. Mus. N. H.); type and paratype Am. Mus. N. H.; allotype and paratype and in author's collection.

**Telamona woodruffi** new species

Resembling *compacta* but with a slightly higher and more angular crest as in *reclivata* and less maculations. Length 8 mm., width 4 mm., height 5 mm.

Pronotum rather high, crest broader than high, slightly inclined posteriorly, dorsum long and straight, both angles rounding. Anterior margins sloping more than posterior and about in line with the humeral angles. Humeral angles roundingly right-angled, almost equaling the eye, much longer and more acute than in *compacta*. About five lateral carinae, quite definitely marked on the apical portion of the pronotum. Male with a smaller crest sloping into the metapodium anteriorly.

*Color*.—Rich, red-brown with occasional white flecks, much smaller and more obscure than in *compacta*. Carina interruptedly dark, posterior slope of crest light with dark margins. Male darker.

Type female and allotype male, Elizabeth, N. J. Three-paratype females and one male from the same locality. All from the Matusch Coll., Am. Mus. N. H. Type in Am. Mus. N. H.; allotype and paratype in author's collection, paratypes in Coll. Am. Mus. N. H. and L. M. Woodruff. Named for Mr. L. M. Woodruff who has done such fine work on the genus *Cyrtolobus*.

**Telamona vestita** new species

Resembling *monticola*, slightly smaller, darker, and with the crest rounding over from the metapodium almost to the posterior angle. Length, female 9 mm., width 5 mm., height 6 mm. Length, male 8 mm.

Pronotum rather broad and short, crest very broad occupying nearly one-half the pronotum, anterior margin arising as a continuation of the curve of the metapodium and rounding over to the elongate dorsum; posterior margin short, upright, the angle often slightly acute. Humeral angles more prominent than in *monticola*, right-angled, equaling the eye.

*Color*.—Pale, dirty yellowish, slightly flecked with brown, a light area on the posterior face of crest. The males are much smaller and darker and the Oregon female is dark.

Type female and allotype male, Quincy, Calif. Paratype females from Quincy and Salinas, Calif. and a male from Tehachapi, Calif. all collected by the writer. One female, Oregon (Westcott); 2 males, Gold Hill, Oregon (Biederman, U. S. Nat. Mus.); 1 female Humboldt, Calif. (VanDyke, U. S. Nat. Mus.); and a male, Santa Cruz Mts., Calif. (U. S. Nat. Mus.). Type and allotype in the author's collection. Paratypes in National Museum, the American Museum of Natural History and the author's collection.

This is a very distinct species resembling *monticola* but lacking the green color. It is close to *reclivata* in structure but has a higher crest.

## SCIENTIFIC NOTES AND NEWS

Public law No. 353, 68th Congress, approved January 31, 1925, reads as follows: "Be it enacted . . . That the Coast and Geodetic Survey is hereby authorized to make investigations and reports in seismology, including such investigations as have been heretofore performed by the Weather Bureau." The *Bulletin* of the Survey announces that publication of seismological reports formerly published by the Weather Bureau in the *Monthly Weather Review* and discontinued July 1, 1924, will be resumed in the near future. The Act will have the effect of placing the seismological work of